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BEFORE THE CALIFORNIA WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

CEASE AND DESIST ORDER NO. R5-2015-XXXX

VALLEY WATER MANAGEMENT COMPANY

RACE TRACK HILL FACILITY AND FEE  
34 FACILITY, EDISON; KERN COUNTY

PROSECUTION TEAM'S REBUTTAL  
BRIEF

July 6, 2015

The Central Valley Regional Board Prosecution Team (Prosecution Team) submits this rebuttal brief in accordance with the Hearing Procedures for this matter. Please note that the Prosecution Team is also submitting a Response to Valley Water's Objections to the Prosecution Team's Evidence and Witnesses.

**I. A Cease and Desist Order Should Issue Because Valley Water is Polluting Groundwater**

**A. Description of Groundwater Impacts at the Valley Water Management Race Track Facility**

This description of impacts to groundwater at the Race Track Facility (Facility or site) operated by Valley Water Management Company (Valley Water) is based on data submitted on behalf of Valley Water by their consultants. It includes only a preliminary review of the Phase 2 report dated 30 June 2015<sup>1</sup> due to the short time to prepare this document. It supplements analysis

<sup>1</sup> References to the Phase 2 Report are to Exhibit 32 of Valley Water's submitted materials.

1 that was submitted with the Prosecution Team's initial evidence, including laboratory data and  
2 review of Valley Water consultant information that had been provided prior to that time.

3 Eight groundwater monitoring wells have been installed around the Facility. Five have  
4 been installed into first encountered groundwater and three have been installed into deeper  
5 groundwater. Following a brief description of the geology and the groundwater, the Prosecution  
6 Team's discussion will be divided into an analysis of the shallow groundwater and deeper  
7 groundwater.

8 The Facility is located in Section 24, Township 29 South Range 29 East, Mount Diablo  
9 Base and Meridian. This is east of Bakersfield in the foothills of the southern Sierra Nevada, south  
10 of the Kern River. Outside of oil production in the area, cattle grazing, rural residential, a small  
11 grape vineyard (fewer than 10 acres), and the Rio Bravo Country Club development occur within a  
12 mile of the Facility.

#### 13 B. Site Geology

14 Exposed across most of the site is the Plio-Pleistocene Kern River-Chanac Formation that  
15 consists of alluvial conglomerates, sands, silts, and clays. Underlying the Kern River-Chanac is the  
16 Miocene Santa Margarita Formation that consists of sandstones and conglomerates (Manning,  
17 1960). A map and cross sections published by the United States Geological Survey (Bartow, 1984)  
18 show that these sediments dip to the southwest towards the San Joaquin Valley floor.

19 The Kern River-Chanac and Santa Margarita Formations are aquifers that provide  
20 groundwater supply in the area. Beneficial uses of groundwater in the area, identified in the Water  
21 Quality Control Plan for the Tulare Lake Basin (Basin Plan)(Exhibit 13/Attachment A to Valley  
22 Water's materials), include Municipal and Domestic and Agricultural Supply.

#### 23 C. Shallow Groundwater

24 Five shallow groundwater monitoring wells (RTH #1 and RTH #3 through RTH #6) have  
25 been installed at the Facility. According to information submitted by Valley Water's consultants,  
26 shallow groundwater beneath the Facility is mounded from percolation of wastewater and this  
27 groundwater is a mixture of native groundwater and wastewater. Concentrations of waste  
28 constituents, including salinity and boron clearly exceed Basin Plan water quality objectives and a

condition of pollution exists. Well RTH #5 is northeast of the Facility and groundwater samples collected from this well do not appear to be significantly impacted by site activities. A groundwater contour map, prepared by Kennedy Jenks Consultants, of the shallow wells for data collected in December of 2014, contours the area northeast of the site, but does not contour the remainder of the site indicating they were not comfortable indicating the direction of groundwater flow across most of the area. Based on water quality data, the highest concentrations of waste constituents in groundwater is along the north, west, and south perimeter of the facility, indicating that the primary direction of impacted groundwater flow may not be to the northeast. In addition, when boring RTH #2 (west of well RTH #1) was advanced to groundwater, the water level measured in that boring was lower than the water level in well RTH-2 and a cross section was produced by Kennedy Jenks Consultants showing groundwater moving to the west (Figure 9 of Exhibit 5).

Groundwater elevation data (Figure 6 of the Phase 2 Report) also identify that gradients are steep and with highly permeable sediment present at the site. This will result in high groundwater flow velocities.

The Phase 2 Report concludes in Section 3 that shallow groundwater beneath the Facility has been impacted by site activities. The report also concludes there is a groundwater mound beneath the site and there is insufficient data to characterize the extent.

In conclusion, shallow groundwater has been impacted by Valley Water's discharges and is polluted in violation of the Facility's waste discharge requirements. Additional work is needed to identify the lateral extent of impact to shallow groundwater and whether corrective action is needed. Insufficient work has been completed to identify how far and to what extent groundwater impacts exist in any direction other than in the drainage along Breckenridge Road to the northeast of the Facility.

#### D. Deep Groundwater

Three deep groundwater monitoring wells (RTH #7D through RTH #9D) have been installed at the site. It is noted that the deep wells are paired with shallow wells. At RTH #7D and RTH #9D there are significant differences in the standing water levels with the water elevations in

1 the deep wells being significantly lower than the standing water level in the shallow wells. At well  
2 RTH #8D the standing water elevation is similar to that in the paired shallow well. This great  
3 difference in vertical gradients indicates there is probably a layer impeding the vertical migration of  
4 water at locations RTH #7D and RTH #9D that is not present at location RTH #8D. This indicates  
5 connection of the shallow and deeper groundwater on the northern edge of the facility. The water  
6 quality data presented in Kennedy Jenks' Phase 2 Report clearly indicates that deeper groundwater  
7 in well RTH #8D, on the northern edge of the facility, is polluted. This is based on elevated  
8 salinity and boron concentrations in groundwater from well RTH #8D and comparison to  
9 wastewater and the detection of petroleum hydrocarbons. The Regional Board has had only a brief  
10 time to evaluate the water chemistry in wells RTH #7D and RTH #9D, but the Phase 2 Report in  
11 Section 3 states that groundwater in these two wells have also been impacted by site activities.

12 Section 3.3.1 of the Phase 2 Report states that based on three water level measurements in  
13 the deep aquifer there is no mounding in the deeper aquifer. Three points (as long as they are not in  
14 a straight line) are needed to identify a plane and are not sufficient to identify an irregularity in a  
15 planar surface.

16 Figure 7 of the Phase 2 Report indicates groundwater flow is to the north-northwest and  
17 based on the groundwater chemistry from well RTH #8D it appears wastewater is flowing in that  
18 direction. However, since all three of the deeper wells appear to have been impacted by site  
19 activities, additional data will be needed to determine the lateral and vertical extent of impacts and  
20 whether corrective action is needed.

21 James Waldron in his statement said that groundwater is not moving. That is difficult to  
22 understand given the Phase 2 Report's (pg. 10) identification of a gradient of 130 feet per mile and  
23 the recognition of permeable sediments underlying the Valley Water Facility. If one were to  
24 estimate groundwater flow velocity using Darcy's equation ( $\text{velocity} = \text{hydraulic conductivity} \times \frac{\text{gradient}}{\text{effective porosity}}$ ) and assumed a hydraulic conductivity of .001 centimeters per second  
25 for sands, the gradient of 130 feet per mile, and an effective porosity of 25 percent; the calculated  
26 groundwater flow velocity is about 320 feet per year. This indicates that 57 years of disposal could  
27 produce impacts that have traveled a significant distance offsite.  
28

1           E. Water Supply Wells

2           The Phase 2 report presents analytical results for four nearby water supply wells. Based on  
3 the Prosecution Team's review of aerial photographs, there appears to be residences near the Valley  
4 Water Facility that probably have water supply wells that are not included in the list of wells  
5 summarized by Valley Water. It is unclear whether Valley Water conducted a well survey to  
6 identify all wells in the area. Also, no construction data for any of the sampled wells are provided  
7 preventing identification of from what level the water samples originated.

8           F. Summary of Valley Water's Impacts

9           The Phase 2 Report and numerous comments by Valley Water's consultants state that there  
10 is no imminent threat to the use of groundwater from disposal activities at the Facility. That cannot  
11 be concluded from the available information. First, the CDO does not require an imminent threat  
12 to be issued under Water Code Section 13301.<sup>2</sup> Besides the fact that we do not know in what  
13 connotation "imminent" is intended, the following facts are provided:

- 14           • Groundwater in both the shallow and deep zones are impacted (polluted) by site activities;  
15           • It is unknown how far Valley Water's impact (pollution) extends in any direction;  
16           • Steep gradients and permeable material indicates impacts to groundwater quality have  
17 probably gone a significant distance offsite;  
18           • Impacts to groundwater quality are occurring due to unlined ponds and the spray fields;  
19           • The beneficial uses of groundwater as identified in the Basin Plan are being impacted and  
20 groundwater is polluted by disposal at the Facility in violation of the waste discharge  
21 requirements.

22           These significant impacts are more than sufficient to enable the Central Valley Water Board to find  
23 violations of Valley Water's Waste Discharge Requirements (WDRs) and issue the proposed CDO.

24           **II. Valley Water's WDRs Prohibit Pollution**

25           The Race Track Hill Facility is governed by Resolution 58-359, which provides in pertinent  
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27           

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<sup>2</sup> See discussion *infra*, pg. 8.  
28

1 part:

2  
3 RESOLVED, that the following requirements shall govern the nature of discharge of waste  
4 water from the production of oil in the Race Track Hill area of Edison Oil Field by Valley  
5 Waste Disposal Company:

- 6 1. Neither the waste discharge nor its method of disposal shall result in the pollution of  
7 surface or underlying ground water;...

8 “Pollution” as defined by Water Code Section 13050 means an alteration of the quality of the  
9 waters of the state, including groundwater, by waste to a degree which unreasonably affects either  
10 of the following:

11 (A) The waters for beneficial uses.

12 (B) Facilities which serve these beneficial uses. Water Code Section 13050(l)(1).

13 Valley Water cites to the Anti-degradation (anti-deg) policy (Exhibit 29) for the proposition that the  
14 baseline water quality for the Valley Water facility would have been set in 1968 for anti-deg  
15 purposes (*see* Valley Water Brief, 28:5:10). This is incorrect, and is a citation to the entirely  
16 inappropriate regulatory document. Instead, the Race Track Hill WDRs, issued prior to the  
17 commencement of Valley Water’s operations, prohibits Valley Water’s discharges or method of  
18 disposal from resulting in pollution. As described extensively above, both shallow and deep  
19 groundwater has been degraded as a result of Valley Water’s operations. Furthermore, existing  
20 data show that waste constituents exceed water quality objectives. Therefore, Valley Water has  
21 violated its WDRs and according to the plain definition of Water Code section 13301, discharges of  
22 waste are taking place (Valley Water’s wastewater disposal practices, to its sprayfields) in violation  
23 of discharge prohibitions (which prohibit pollution) prescribed by the regional board (the 1958  
24 WDRs), and therefore the proposed CDO can be entered by the Regional Board.

25  
26 **III. A CDO Is Necessary to be Able to Enforce Against Valley Water in a Timely**  
27 **Manner, a 13267 Is Inadequate**

28 Prior to issuing an administrative draft of the CDO, the Prosecution Team considered other  
potential enforcement options that would achieve the Prosecution Team’s goals of allowing the  
Valley Water to continue to operate its business in a manner protective of water quality and being  
able to hold Valley Water immediately accountable for noncompliance with enforceable deadlines



1 for the actions in the proposed CDO. As with any order proposed for the Board's consideration,  
2 enforceability of the order ultimately adopted by the Board is an important concern of the  
3 Prosecution Team.

4 The CDO requires cessation of Valley Water's use of the sprayfields by 15 August 2015.  
5 This cannot be accomplished through the use of a 13267 Order, as sought by Valley Water. The  
6 CDO addresses ongoing violations of Valley Water's WDRs; a 13267 Order cannot do that. A  
7 time schedule order (TSO) pursuant to Water Code Section 13308 would allow the pollution in  
8 violation of 1958 WDRs and the Basin Plan to continue. The Prosecution Team felt that the CDO  
9 was the most appropriate enforcement tool to bring Valley Water into compliance with current  
10 regulatory water quality standards.

11  
12 **IV. Evidence Was Submitted With Initial Submission; The Board Will Make**  
13 **Findings on that Evidence**

14 **A. The Prosecution Team and Central Valley Water Board are Separate Entities**

15 Valley Water argues that inadequate evidence was submitted, and confuses the obligations  
16 of the Prosecution Team and Central Valley Water Board (*see* Valley Water Brief, 22:16-24:24;  
17 *refer also to* the Prosecution Team's Response to Valley Water's Objections, submitted herewith).  
18 The Central Valley Water Board has not yet acted or made findings. The Prosecution Team has  
19 brought this matter before the Central Valley Water Board because pollution has occurred, in  
20 violation of Valley Water's WDRs, and the Basin Plan. Evidence submitted in the record with the  
21 Prosecution Team's initial submission allows for the Central Valley Water Board to make these  
22 findings. The evidence includes notices of violation (NOVs), annual monitoring reports submitted  
23 by Valley Water, and Valley Water's own consultants' documents. As explained in greater detail  
24 in the Prosecution Team's Response to Valley Water's Objections, Clay Rodgers<sup>3</sup> was designated  
25 to testify and the scope of his anticipated testimony was described in the Prosecution Team's  
26

27 <sup>3</sup> A second expert witness, Dale Harvey, has been designated to rebut the numerous expert witnesses designated by  
28 Valley Water. The scope of Mr. Harvey's testimony directly rebuts Gary Carlton and Dee Jaspar's testimony.

1 witness list and timely submitted to Valley Water. The Prosecution Team is not objecting to Valley  
2 Water's renewed request for additional time, so that in part these expert issues may be addressed  
3 and hopefully resolved.

4 B. Valley Water Continues to Misstate the Burden for the Central Valley Water Board to  
5 Issue a CDO

6 A CDO should issue under Water Code Section 13301 when a discharge of waste is taking  
7 place or threatening to take place in violation of requirements or discharge prohibitions prescribed  
8 by the Regional Board or State Board. Nowhere does it require an "imminent" threat.

9 C. Evidence Submitted by Valley Water's Own Consultants Comprises a Large Portion of  
10 the Prosecution Team's Evidence

11 As described in the Prosecution Team's opening brief and certain exhibits (Exhibit 11), the  
12 Prosecution Team relies on Valley Water's own submissions pursuant to Regional Board 13267  
13 Orders to determine that pollution has occurred as a result of Valley Water's activities. Valley  
14 Water now objects that Exhibits 26 and 27 were initial and interim reports and superseded by  
15 Exhibit 32 (*Technical Report in Support of Valley Water Management Company, Edison Oilfield*  
16 *Subsurface Investigations Phase 2 Final Report, 29 June 2015*). Exhibits 26 and 27 have not been  
17 withdrawn from the evidentiary record, and Exhibit 32 will now be relied upon by the Regional  
18 Board witnesses, as it was unavailable on the date of the Prosecution Team's initial submission.  
19 The conclusions of Valley Water's own consultants do not exculpate Valley Water, as the  
20 Prosecution Team will demonstrate.

21 D. Race Track Violations Were Proved by Submitted Evidence

22 Resolution No. 58-349 states: "Neither the discharge nor its method of disposal shall result  
23 in the pollution of surface or underlying ground water." "Pollution" is the alteration of the quality  
24 of the waters of the state by waste to a degree which unreasonably affects the waters for beneficial  
25 uses. Table 3 of the Phase 2 Final Report (Exhibit 32, Page 34), presents analytical data indicating  
26 that waste constituent concentrations in groundwater beneath the Race Track Hill Facility are high  
27 enough to render the groundwater unfit for drinking and for irrigation, thereby unreasonably  
28 affecting these beneficial uses and, therefore, polluting the groundwater. Pollution of the



1 groundwater is a violation of Resolution No. 58-349.

2 E. Violations of Fee 34 WDR Were Proved by Submitted Evidence

3 Discharge Specification B.1 of Waste Discharge Requirements Order 92-110 (Exhibit 2)  
4 contains numerical limits for electrical conductivity, chloride, and boron in the wastewater  
5 discharged to ponds. Specification B.2.c allows Dischargers with effluent that exceeds the above  
6 numerical limits to demonstrate in a Regional Board hearing that their discharge will not  
7 substantially affect water quality or cause a violation of water quality objectives. Submitting the  
8 1996 report (Exhibit 25) did not relieve Valley Water of the responsibility of complying with the  
9 WDRs before a demonstration was made at a Regional Board hearing. Discharging wastewater  
10 with electrical conductivity, chloride concentrations, and boron concentrations that exceed the  
11 numerical limits in the WDRs is a violation of those WDRs. The CDO requires a hydrogeological  
12 site characterization that could provide the data needed to make a determination that the Fee 34  
13 Facility is appropriate for the discharge of the wastewater it is currently receiving.

14  
15 **V. Rebutting Specific Points in the Valley Water Brief**

16 A. Recent Enforcement Against Oil Field Owners and Operators

17 The increased enforcement by the Fresno Regional Water Board staff on oil field owners  
18 and operators (*see for example*, Exhibit 14; Valley Water Brief, 7:20-21; and  
19 [http://www.waterboards.ca.gov/centralvalley/water\\_issues/oil\\_fields/index.shtml](http://www.waterboards.ca.gov/centralvalley/water_issues/oil_fields/index.shtml) ) is a result of  
20 different political influences, understandings of water quality impacts caused by these activities,  
21 prioritization of staff resources and is entirely appropriate when there are existing beneficial uses  
22 being threatened by such operations.

23 B. The WDRs Prohibit Pollution and Valley Water Disposes, it Does Not "Irrigate"

24 Valley Water states that its WDR contains no express prohibition on the use of sprinkler  
25 irrigation. (Valley Water Brief, 8:11-13) First, the Prosecution Team takes issue with the use of  
26 the word "irrigation." Valley Water's activities are purely for disposal, and to increase the amount  
27 of wastewater it can dispose of. While there may be some evapotranspiration involving non-native  
28 salt-tolerant plants, "irrigation" implies agriculture and the application of water at an agronomic

1 rate. Second, Valley Water tries to downplay the effect of the discharge to its sprayfields, but  
2 comparing them to its discharges to its unlined sumps. As indicated in Exhibit 14, submitted with  
3 the Prosecution Team's initial submission, all unlined sumps that cannot comply with WDRs will  
4 be phased out by December 2016<sup>4</sup>. Finally, Valley Water's WDRs *do expressly prohibit pollution*,  
5 which as discussed herein, has been caused by Valley Water's activities.

6 C. Valley Water Bears the Burden to Prove that Its Discharges Will Not Substantially  
7 Affect Water Quality<sup>5</sup>

8 Valley Water makes the argument a number of times that it can qualify for some sort of an  
9 exception to continue its discharges in excess of the Basin Plain limitations. *See for example*,  
10 Valley Water Brief, p. 10, fn. 2, Exhibit 38. Valley Water would have the burden to demonstrate  
11 that its proposed discharge will not substantially affect water quality nor cause a violation of water  
12 quality objectives. *See* Valley Water Brief, p. 15:28:16:1.

13 However, this hearing cannot be used to de-designate any beneficial uses. As is noted in  
14 one of the alternatives presented by Valley Water, to de-designate a particular groundwater  
15 beneficial use is a significant undertaking. It requires approval of the Regional Board, the State  
16 Board, and the Office of Administrative Law. Before embarking on the process, however, the  
17 proponent of the amendment must complete the equivalent of a use attainability analysis (UAA)  
18 technical report. In this case, Valley Water's equivalent UAA technical report would reveal  
19 existing municipal and agricultural beneficial uses, as reflected in the Basin Plan. These beneficial  
20 uses are not proposective and theoretical, but actual and based on real conditions.

21 The groundwater downgradient of the Valley Water site is designated MUN (municipal use)  
22 and AGR (agricultural use). There is no authority for the Central Valley Water Board to de-  
23 designate an existing use. In fact, there are residents in the area with completed wells. Regardless

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24  
25 <sup>4</sup> Furthermore, the proposed CDO is an alternative enforcement action to an ACLC for penalties pursuant to Water  
26 Code 13350 for Valley Water's discharges to land and groundwater, a water of the State, as a result of both the use of  
the unlined sumps and the sprayfields.

27 <sup>5</sup> This responds to arguments raised by Valley Water in its Brief at 9:18-10:1; 15:19-17:28, 26:2-29:2. The Prosecution  
28 Team's argument is the same regardless of the basis for Valley Water's "exception." Existing beneficial uses cannot be  
de-designated by the regional boards.

1 of whether Valley Water believes that community water suppliers can waive MCLs or that other  
2 exceptions may apply (*see* Valley Water Brief, fns. 8 and 9), the exceptions do not currently apply.  
3 Simply put, the Central Valley Water Board is legally prevented from granting Valley Water the  
4 exception that it is seeking. There is no exception to the municipal -and agricultural beneficial  
5 uses, and a Basin Plan amendment would not be granted.

6 D. Valley Water is a Point Source Polluter, and Not a Participant in the CV-SALTS  
7 Program

8 Valley Water seeks additional time to submit information, or to shift the focus to other  
9 operators region wide. (Valley Water Brief, p.20) However, the comparisons to CV-SALTS are  
10 misplaced. To the Prosecution Team's knowledge, Valley Water has not been actively involved in  
11 the CV-SALTS process. Valley Water is a large industrial waste processor that discharges an  
12 extraordinary amount of salt as a point source. Because of Valley Water's activities, the  
13 groundwater resources, upgradient from Bakersfield, have been polluted. There are great demands  
14 on the groundwater resources, especially in this time of drought. A focused approach on the  
15 responsible point source is appropriate.

16 E. Valley Water Board's Proposed Alternatives Are Impractical and Extremely Optimistic  
17 in Terms of Anticipated Completion Dates

18 Valley Water can of course pursue alternatives for disposing its wastewater. However, that  
19 does not mean the CDO should not issue. Valley Water's timelines for its proposed alternatives  
20 may be inaccurate. For example, a number of dischargers the Regional Board regularly works with  
21 state that DOGGR applications for UIC (underground injection control) wells take approximately  
22 two years. Valley Water has estimated 251 days. In another alternative, Valley Water plans to  
23 prepare a Basin Plan amendment and have it affect new groundwater rules, so that new WDRs can  
24 eventually be adopted by December 31, 2019 (*see* Valley Water Exhibit 80, Time Schedules for  
25 Four Alternatives, one of which includes de-designating a MUN beneficial use; Valley Water does  
26 not discuss the existing MUN users or existing agricultural beneficial use). As described above, a  
27 Basin Plan amendment process cannot de-designate an existing beneficial uses, whether municipal  
28 or agricultural. The proposed CDO also contemplates having Valley Water revise its WDRs or  
come under general WDRs, but by December **2016**. Finally, the alternatives discussed (*see* Valley


1 Water Brief, 21:6-17) seem dubious given the quality of Valley Water's wastewater. Blending to  
2 provide water to Arvin Edison may require a 20:1 ratio.

3  
4 **VI. Conclusion**

5 The Prosecution Team continues to believe that the proposed CDO is necessary to address  
6 ongoing violations and pollution at the Valley Water facility.

7  
8  
9 Dated: July 6, 2015

REGIONAL WATER QUALITY CONTROL  
BOARD, CENTRAL VALLEY REGION

10  
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